

Saving the Great Lakes

Public Participation in Environmental Policy

CRAIG WADDELL

A central concern in discussions about science policy in general and environmental policy in particular has been the role of the public in communicating risks and adjudicating environmental and science policy disputes (see, for example, Barke; Goggin; Goldhaber; Killingsworth and Palmer; Morone and Woodhouse; U.S. National Research Council; and Petersen). According to Petersen, "Citizen participation is nearly synonymous with democracy" (3); and Goldhaber suggests that "How to construct new forms of democracy that would allow us some influence over all the decisions that affect us is one of the daunting challenges of our time" (126). Although numerous models of public participation are possible, four are especially pertinent to the current discussion.

1. *The technocratic model.* Under this model, technical decisions are left to "experts" in science, engineering, industry, and government, and no appropriate role is defined for public participation or oversight. This model generally assumes that experts, deliberating among themselves, have reached or will reach consensus. We need only look to Eastern Europe and the former Soviet Union to see the potentially devastating consequences of this centralized approach. At the end of the Communist era, 65 percent of Poland's river water was so polluted that it could not be used even for industrial purposes, and one in seventeen deaths in Hungary was attributable to air pollution (French 5, 23).¹

As Robert Oppenheimer said in the 1954 security clearance hearing that was brought on by his opposition to the development of the hydrogen bomb, some of our decisions both involve complicated technical information and have important moral and human consequences. There is danger, Oppenheimer went on to say, in making such decisions in secret "not be-

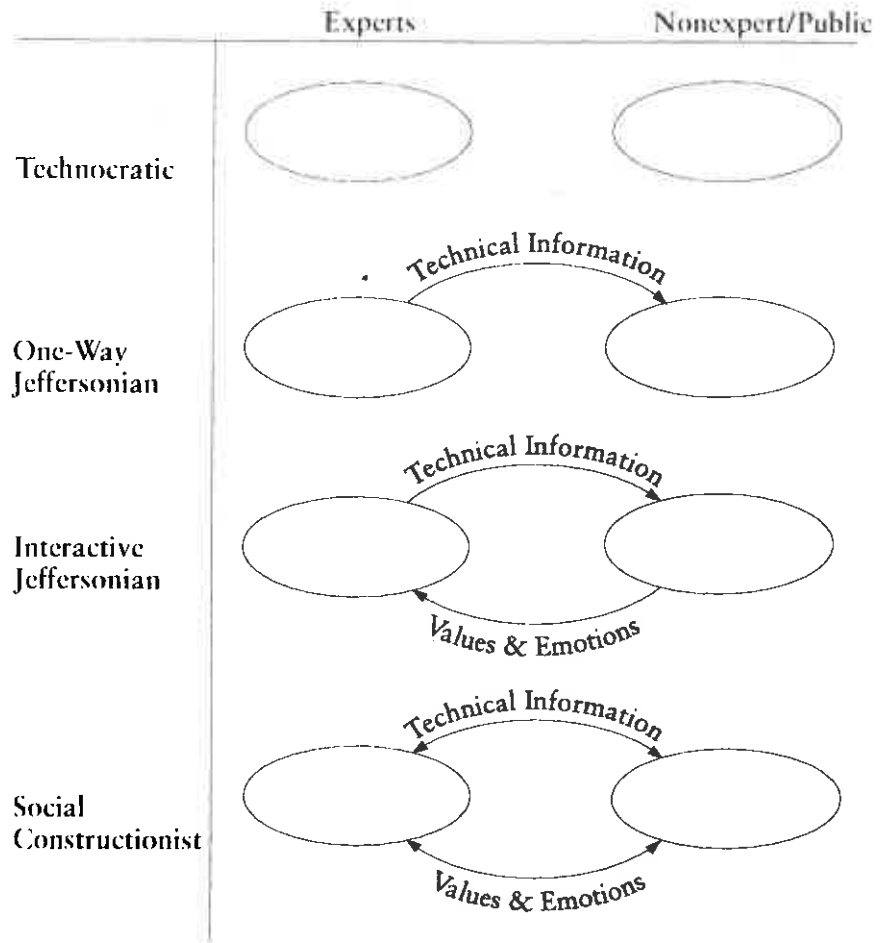
cause the people who took the decisions were not wise, but because the very need, the very absence of criticism and discussion tended to corrode the decision making process" (U.S. AEC 229-30).

2. *The one-way Jeffersonian model.* In an 1820 letter to William Charles Jarvis, Thomas Jefferson wrote, "I know of no safe depository of the ultimate powers of the society but the people themselves; and if we think them not enlightened enough to exercise their control with a wholesome discretion, the remedy is not to take it from them, but to inform their discretion by education" (278). One implication of this Jeffersonian vision of democracy for risk communication and environmental and science policy formation is that the public has a right to participate in decisions that affect its well-being and/or that of the larger ecosystem, but that it should be empowered to do so, simply and unproblematically, through a one-way transfer of expert knowledge. As Lin Chary said, speaking at the public discussion session of the International Joint Commission's Sixth Biennial Meeting on Great Lakes Water Quality, "I have heard more than once during these meetings the suggestion from government and industry officials that if they could just educate us, we'd understand" (IJC Transcript 211).

3. *The interactive Jeffersonian model.* In its 1989 report *Improving Risk Communication*, the National Research Council rejects the one-way Jeffersonian model in favor of a two-way, interactive model of risk communication, a model that might be considered a more charitable interpretation of the Jeffersonian vision of democracy. Under this model, technical experts communicate their expertise to the public, and the public communicates its values, beliefs, and emotions to technical experts. Thus, while the public adjusts to expert knowledge, experts adjust to public sentiments.

4. *The social constructionist model.* This model expands upon the interactive Jeffersonian model by acknowledging that the values, beliefs, and emotions of experts in science, engineering, industry, and government also play a significant part in risk communication and environmental policy formation. Furthermore, technical information also flows in both directions; thus, the distinction between "expert" and "public" begins to blur, as does the distinction between audience and rhetor. Under this model, risk communication is not a process whereby values, beliefs, and emotions are communicated only from the public and technical information is communicated only from technical experts. Instead, it is an interactive exchange of information during which *all participants* also communicate, appeal to, and engage values, beliefs, and emotions. Through this process, public policy decisions are socially constructed.

One example of this fourth model—at least in terms of the two-way transfer of technical information—can be found in the 1992 United Nations Conference on Environment and Development (UNCED) in Rio de



Four models of public participation

Janeiro. Here for the first time in a major U.N. conference, nongovernmental organizations (NGOs) played a major role as *generators* of information, rather than simply as disseminators of information that had been developed by others (Carpeling-Alakijah). Another example is *Toxic Wastes and Race in the United States*, a 1987 report by the United Church of Christ's Commission for Racial Justice. In his preface to this report, Benjamin Chavis, the commission's executive director, notes that "involvement in this type of research is a departure from our traditional protest methodology. However, if we are to advance our struggle in the future, it

will depend largely on the availability of timely and reliable information" (Chavis x).

The interactive Jeffersonian model, as promoted by the National Research Council, is the current progressive paradigm for risk communication. That is, this model is offered as a progressive alternative to the one-way Jeffersonian model. However, the interactive Jeffersonian model is flawed at the outset by its implicit paternalism: the values, beliefs, and emotions of the public cannot truly be considered legitimate until those of technical experts are also acknowledged. Hence, the interactive Jeffersonian model is already being displaced by the social constructionist model in that (1) the public is developing greater technical expertise, and this expertise is being asserted and recognized;² (2) there is growing recognition and acknowledgment of the roles the values, beliefs, and emotions of technical experts play in shaping science and environmental policy; and (3) members of the public are increasingly asserting an appropriate role for their own values, beliefs, and emotions. To some extent, our increased recognition of the subjective side of science—in part, a contribution of history, philosophy, sociology, and rhetoric of science—has legitimized the subjective aspects of public participation in environmental and science policy disputes.

Public Participation in the International Joint Commission's Great Lakes Water Quality Hearings

This study examines what effect, if any, public testimony at the International Joint Commission's Sixth Biennial Meeting on Great Lakes Water Quality (1991) had on the commission's *Sixth Biennial Report* to the Canadian and American governments. My study of this case was motivated by three interrelated questions: (1) Did provisions for public participation in the IJC's Sixth Biennial Meeting provide only for catharsis, or did they provide a genuine opportunity for the public to influence the IJC's policy recommendations?³ (2) What roles did emotion and technical expertise play in shaping the IJC's policy recommendations? and (3) What roles did egocentric, homocentric, and ecocentric appeals play? My analysis focuses on a four-and-a-half-hour public discussion session, held near the end of the Sixth Biennial Meeting; on analysis of videotapes and a transcript of the public discussion session; on informal interviews with twelve of the forty-nine people who testified at the public discussion session; on formal interviews with five of the six commissioners (conducted six days after the release of their report);⁴ and on a rhetorical analysis of the commission's *Sixth Biennial Report on Great Lakes Water Quality*.

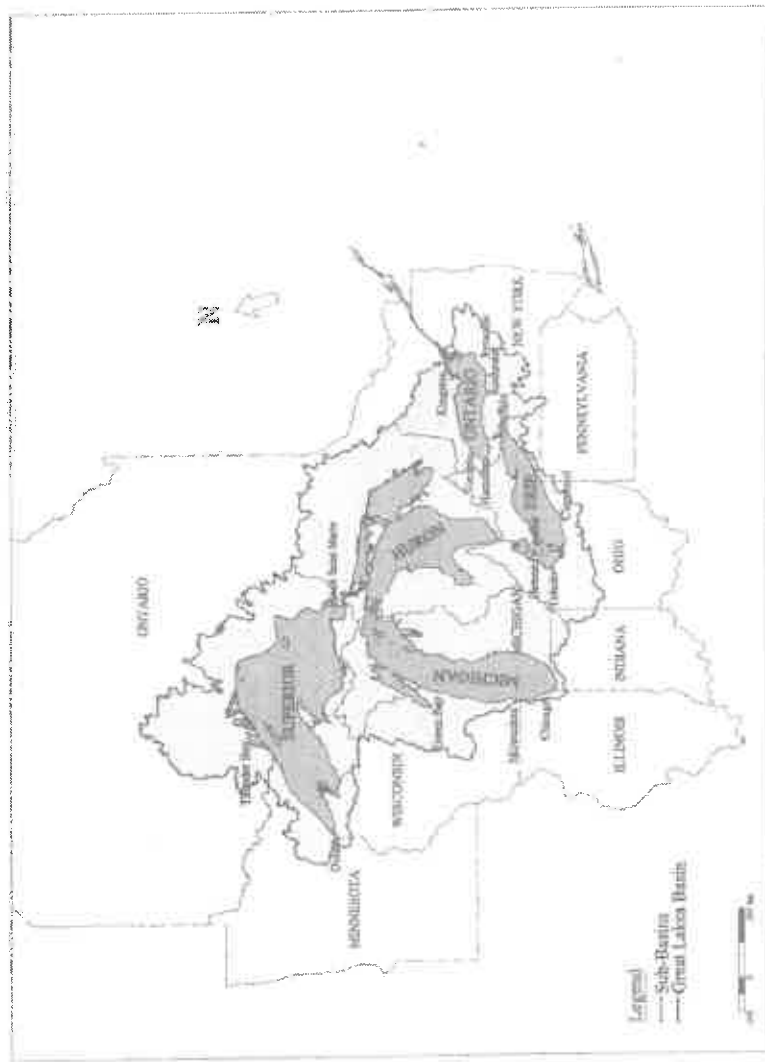
The International Joint Commission (IJC) is a Canadian and American organization, established by the Boundary Waters Treaty of 1909. The

three Canadian and three American commissioners are appointed by their respective heads of government. At the time of the 1991 Biennial Meeting on Great Lakes Water Quality, the Canadian commissioners were Davie Fulton (co-chair), Robert Welch, and Claude Lanthier; and the U.S. commissioners were Gordon Durnil (co-chair), Hilary Cleveland, and Robert Goodwin. The commission investigates and monitors boundary water disputes—especially those concerning water quantity and water quality—and advises the two governments of its nonbinding recommendations. Over the past eight decades, the IJC has become a model for the resolution of international disputes, as is evidenced, for example, by a contingent of Russian observers who attended the Sixth Biennial Meeting in Traverse City, Michigan.

With a human population of over 40 million people, the Great Lakes basin, the world's second-largest reservoir of fresh surface water,⁵ is subjected to immense environmental stress. This stress is perhaps most graphically illustrated by Detroit's Rouge River and Cleveland's Cuyahoga River, both of which dump directly or indirectly into Lake Erie, the shallowest and most degraded of the Great Lakes. Colborn et al. describe the condition of Lake Erie in the mid-1960s:

By the mid-1960s, Lake Erie was characterized widely as dead or dying, overloaded by wastes from human activities that were only slightly less damaging in the other lakes. The spectacle of a burning river in 1969 symbolized the degradation, when oil and debris in Cleveland's Cuyahoga River caught fire. Commercial fisheries in Lake Erie and Lake St. Clair were closed because of high mercury content in fish tissues. Eggshell thinning and adult mortality in bird populations indicated that DDT . . . and other pesticides were having unexpected and severe effects on wildlife. (2-3)

Canada and the United States responded to this degradation with the Great Lakes Water Quality Agreement of 1972, through which the two countries affirmed their commitment to restore and maintain the integrity of the Great Lakes basin ecosystem. Perhaps the most significant feature of the original agreement was its schedule for reducing the amount of phosphorus discharged into the Great Lakes in order to minimize eutrophication problems.⁶ Having met with considerable success in reducing phosphorus inputs, the agreement, as revised in 1978 and amended in 1987, now obliges Canada and the United States "to virtually eliminate the input of persistent toxic substances" into the Great Lakes and commits the two countries to the strategy of zero discharge of such substances as a principal means of achieving this goal (70).⁷ For over two decades now, the Great Lakes Water Quality Agreement has been a major focus of the IJC's activities.



Map of the Great Lakes basin. Courtesy of Ecosystem Health Division, Ontario Region, Environment Canada.

The Boundary Waters Treaty, which established the IJC, requires that the IJC provide all interested parties with a "convenient opportunity to be heard" on matters under consideration (article 12). In including this provision in the treaty, the governments explicitly rejected the technocratic model of policy formation. However, which of the other three models the IJC does and *should* represent is open to interpretation.

In order to provide interested parties with a convenient opportunity to be heard, the IJC has, among other things, made its biennial meetings on Great Lakes water quality open to the public and has provided an opportunity for public testimony at these meetings. However, only since the Fifth Biennial Meeting in Hamilton, Ontario (1989), has there been significant public participation (Durnil 7). During the public discussion session at the Sixth Biennial Meeting, Lin Chary of Gary, Indiana, noted the limited opportunity for public participation during the Fourth Biennial Meeting in Toledo, Ohio (1987): "in order to ask a question, you had to write it down on a card and give it to somebody, and then they decided whether or not they would read your question" (248).⁸ And Carol Sweinhart of Brighton, Michigan, who described herself as "a fairly long-time observer of the International Joint Commission and its processes," recalled when the biennial meetings were "a completely closed-door affair" (182). Since the 1989 meeting in Hamilton, however, public participation has increased, and Ms. Sweinhart was the first in a long series of speakers during the 1991 public discussion session to praise the commission for its respect for democratic processes and its efforts to protect the environment.

The Public Discussion Session

Environmental historian Samuel Hays has pointed out that "In our own day environmental affairs have evolved so that the expert thinks of the political context as one of 'us' and 'them,' of the knowledgeable and rational experts and the uninformed and emotional public" (9). The IJC's Sixth Biennial Meeting—which lasted from 29 September through 2 October 1991—provides a good example of such a conflict.⁹ Early along in the meeting, a running commentary began on the distinction between the technical expertise of scientists and the emotions of the public. At a Zero Discharge Alliance demonstration immediately prior to the IJC's opening plenary session, a Greenpeace speaker, Jack Weinberg, said, "They [governments and industry] are out to get rid of this movement by saying that they're for science and we're for emotions. We're here to say that's not going to work." Commentary on the role of emotion was brought to a head during the 7–11:30 P.M. public discussion session on Tuesday, 1 October. During this session, the commissioners heard forty-nine speakers

express their concerns about the Great Lakes basin ecosystem. I will summarize the comments of eight speakers who highlight the controversy about emotional appeals and who demonstrate that such appeals are used not only by the public, but also by technical experts.

Public testimony at the Sixth Biennial Meeting and my subsequent interviews with the commissioners suggest that at least some of the IJC's recommendations emerge from an interactive process that includes the five following stages: (1) folk epidemiology—possibly in conjunction with some preliminary scientific findings—alarms the public about a potential problem;¹⁰ (2) public testimony on this problem is offered before the IJC; (3) the commissioners refer compelling issues to their various scientific advisory boards for investigation; (4) the scientific advisory boards confirm some of the public's concerns, leading the commissioners to be convinced (prepared to accept an idea intellectually), but not necessarily persuaded (committed to act on the basis of that idea); (5) on hearing further emotional appeals from the public on this issue, the commissioners become persuaded, but contend that public testimony only confirms what they already believe based on scientific evidence.

The first speaker in the public discussion session was Ira Markwood, a representative of the Illinois Section of the American Water Works Association. In 1986, the IJC's Water Quality Board had developed a working list of 362 chemical pollutants found in the water, sediment, and/or biota of the Great Lakes basin ecosystem; approximately half of these pollutants were synthetic chlorinated organic substances (*Sixth Biennial Report* 28–29). Fearing that growing public opposition to chlorine and chlorine-containing compounds might jeopardize efforts to disinfect drinking water and sewage, Mr. Markwood offered the following warning:

If chlorine is no longer available for water treatment, we can expect major waterborne epidemics such as now are occurring in Peru, where out of a population of approximately 21,900,000, there have already been over 180,000 cases of cholera and more than 5,000 deaths. This epidemic is moving north. . . . Lack of chlorination of drinking water will result in a major reduction in population and in life expectancies in the area where chlorine and its disinfectant compounds are not available. . . . imagine the panic occurring from an epidemic such as cholera when death can result only hours after symptoms appear. (181–82)

The third speaker was Pamela Ortner-Mukavetz, a nurse who represented two grassroots environmental organizations from the suburban Detroit area (Clean Air Please and People United Against Incineration). Ms. Ortner-Mukavetz described the human health effects of toxic pollution and then read a letter to the commission from a woman whose eight-year-old son had been diagnosed with leukemia, a disease his mother believed

was caused by environmental pollution. As Ms. Ortner-Mukavetz finished her statement, Chairman Durnil said, "as some of you attempt to tug at our emotions, there are others, including me, who have children similar to that situation you're talking about" (186). This statement triggered a running commentary on the role of emotion in the IJC's deliberations.¹¹

Shortly after Ms. Ortner-Mukavetz's testimony, Robert Smerko, president of the Chlorine Institute, expressed his support for the goal of zero discharge of chlorine, but cautioned that "none of us can afford to be swayed by emotion from *any* angle" (195-96). After one intervening speaker, Mr. Smerko was followed by Ron Hohenstein, superintendent of environmental engineering for the Board of Water and Light in Lansing, Michigan. Mr. Hohenstein testified that "With the advent of chlorination of water supplies, such scourges as cholera, typhoid, diphtheria, bubonic plague, hepatitis, dysentery, or you name it, have been controlled, resulting in the saving of millions of lives" (199). He went on to implore the commissioners not to recommend banning the use of chlorine in water supply systems because "naturally evolved microbial life forms exist waiting to devastate vast numbers of human beings, now and into the future" (199). I do not want to diminish the concerns of the chlorine and waterworks representatives; however, I *do* want to point out that, despite Mr. Smerko's caution, emotional appeals were and are used not only by the public, but also by technical experts.¹²

As the hearing proceeded, speakers continued to employ emotional appeals and to comment on the appropriateness of such appeals. Bob Mondy, who identified himself as a Vietnam veteran, said:

all we really want to do is tug at your heart. As you said earlier, we're attempting to tug at your heart. Well, you better believe we are, because you're one of the best voices we have to tug at other hearts. If I don't get to your heart tonight, I hope somebody else in this room does, because we're not talking about fun and games. . . . We're tugging at your hearts because the facts don't seem to work. . . . I don't know what it takes to reach your hearts. I know I look at my seventeen nephews and nieces, and they get my heart real fast. I appreciate that you've got children, but I'm going to tug at your heart anyway, because I want to know that we've got your heart. I want to know that you're going to take a message from this group of people here forward for us that's strong enough that it implements serious action. (201)

Another speaker, Rob Taylor, a student from Toronto, said, "I know this is tugging at heart strings, but I think that's what we have to do, because going through brains doesn't work" (221).

Mr. Taylor was followed by Phyllis Gorski, a pharmacist from suburban Detroit and president of Parents Against Cancer Plus, an environmental

health organization. After introducing herself, Ms. Gorski said, "Dr. Wayland Swain [vice president of Eco Logic, an environmental consulting firm] once said . . . that environmental problems are emotional, technological, and political, so we don't want to omit the emotional. . . . This is my emotional part" (221-22). She then proceeded to tell the story of her son David, who at age five was diagnosed with cancer, a disease Ms. Gorski believes was caused by environmental contaminants. She described eighteen months of painful chemotherapy, spinal taps, and bone marrow taps and how representatives of the local cemetery visited her home to ask if she wanted to buy a cemetery plot (221-22). She concluded by urging the IJC to involve more health professionals in the deliberative process (224).

Shortly after Ms. Gorski came testimony by Ann Hunt, from central Michigan, director of Citizens for Alternatives to Chemical Contamination, a regional grassroots group. Ms. Hunt said that those who attended the Workshop on Human Health Issues earlier that day "found out that as mothers of our children, we gave our daughters and our sons [voice breaking], excuse me, a tremendous load of toxic chemicals while we carried them in our wombs. We then compounded that when we breast fed them" (230, participant observation, and videotape). It is noteworthy that while Ms. Gorski felt obliged to justify her emotion and Ms. Hunt felt compelled to apologize for hers, the emotional appeals of technical experts passed without comment. At least three other speakers referred back to the issue of tugging at emotions or pulling at heartstrings (226, 228, 245); and Lin Chary of Great Lakes United complained that "we've been called emotional by industry, like that's an insult or something" (248).

General Influence of Public Testimony on the IJC's Recommendations

Early in the public discussion session, Carol Sweinhart, representing the League of Women Voters of Michigan, commended the IJC for its efforts to encourage public participation in the policy process and recommended that the commissioners take this process one step further by establishing a citizen advisory board. Chairman Durnil responded to this recommendation by saying that "you have no reason to presume that the advice we received from the [IJC's various scientific and technical advisory] Boards is any more likely to be taken than the advice we receive from you here tonight" (183). And Chairman Fulton closed the session by saying, "our next biennial report, I assure you, will also make clear what are the views that we have heard expressed tonight with such unanimity, such clarity, and such relevance; and they will be tied in with our recommendations that are made in that biennial report. I assure you they will be reflected"

(259). My interviews with the commissioners, however, suggest that the relationship between public testimony and the IJC's recommendations was somewhat complex: there was an acknowledged influence of public testimony on some recommendations, a displaced or delayed influence on other recommendations, and an unacknowledged influence on still other recommendations.

In my interviews with them, the commissioners reported that public testimony at the 1991 meeting *did* influence at least two of the thirteen recommendations in their *Sixth Biennial Report*: the weight-of-evidence and chlorine recommendations. Welch noted that "people were getting maybe a little impatient with further study. . . . and . . . we were attracted to the weight-of-evidence approach. That's fairly significant. And I think if you wanted a causal link [between public testimony at the Sixth Biennial Meeting and recommendations in the *Sixth Biennial Report*], you could find [it in] the seeming impatience with the endless debates" (Welch 13). Given that in some cases, "unequivocal evidence of injury to humans by persistent toxic substances may be difficult or impossible to obtain," the commissioners suggest in their *Sixth Biennial Report* that "At some point, the emerging mass of data and information must be accepted as sufficient to prompt or . . . ratify action against environmental contaminants" (21–22). Hence, they recommend that the governments "adopt and apply a weight-of-evidence approach to the identification and virtual elimination of persistent toxic substances" from the Great Lakes basin ecosystem (22). The commissioners also recommend that "the Parties [i.e., the Canadian and U.S. governments], in consultation with industry and other affected interests, develop timetables to sunset the use of chlorine and chlorine-containing compounds as industrial feedstocks and that the means of reducing or eliminating other uses be examined" (30).¹³ Durnil indicated that "the chlorine [recommendation] was affected directly by what we heard from the public" (Durnil 16).

Cleveland pointed out that public testimony influenced not only what the commissioners recommended, but also what they *did not* recommend: "integrated monitoring *might* have been a recommendation in our *Sixth Biennial Report* . . . but nobody ever talked about it from the public. . . . So I guess we have to look at Traverse City from two ways: things that led to some of our recommendations, but *also* things that we decided *not* to recommend" (Cleveland 13).

The commissioners also commented on the influence of expert testimony from the public; for example, on Great Lakes United's report, "Broken Agreement: The Failure of the United States and Canada to Implement the Great Lakes Water Quality Agreement." Cleveland indicated that reading this report demonstrated to her that "a lot of the points of the [Great

Lakes Water Quality] Agreement have not been carried out" (Cleveland 19). Cleveland also indicated that her thinking had been influenced by reading *Great Lakes, Great Legacy?* (Colborn et al.), the report on a two-year study of the Great Lakes basin conducted by the Conservation Foundation and the Institute for Research on Public Policy (Cleveland 20).

Despite the acknowledged influence of public testimony, in their *Sixth Biennial Report* the commissioners say that the reports of their various scientific and technical advisory boards "provided the foundation for [their] conclusions and recommendations" (1).¹⁴ And in my interviews with them, the commissioners indicated that prior to their 1991 Biennial Meeting, they had already anticipated much of what they would include in their report. Durnil, for example, said that "our planning for the meeting was geared to the things we thought we were moving toward putting in our report" (Durnil 9), and Cleveland said that prior to the Traverse City meeting, the commissioners "were already working on some of the recommendations that [they] made" in their *Sixth Biennial Report* (Cleveland 5).

In interviews, the commissioners suggested that public testimony primarily confirmed their prior conclusions. For example, Durnil said that public testimony "tends to be more reconfirming than it does give you original thoughts, because if you deal with it all year long, it's hard to hear something new, other than what the scientists are bringing you" (Durnil 11); and Welch said that "there was a lot of public *reinforcement* of the advice we were getting [from the IJC advisory boards]" (Welch 19). The commissioners also suggested that public testimony added political weight to their recommendations when they presented their report to their respective governments. Durnil noted that public reinforcement of the IJC's conclusions is "*important* because from a policy standpoint, from a realistic political standpoint, it gives more credibility to the report when it goes to a congressman or a senator, or whoever it goes to. . . . It's based on scientific input from a variety of sources . . . but also [on] the testimony of the public (Durnil 9).

Some of the commissioners' comments, however, suggest that public testimony may have helped to *shape*, rather than simply to *confirm*, more than the two recommendations I mentioned above. The commissions pointed out, for example, that (1) the structure of their 1991 meeting was strongly influenced by the public testimony that was given at the previous Biennial Meeting on Great Lakes Water Quality (Fulton 4); (2) their priorities and their instructions to their various advisory boards over the two intervening years had been influenced by this previous testimony (Fulton 2-4); and (3) public testimony given during the 1991 meeting would shape the priorities for and structure of their next biennial meeting, including, for example, the involvement of more health professionals (Durnil 38-41).

In describing the public discussion session in their *Sixth Biennial Report*, the commissioners say that "Many comments reiterated criticisms or suggestions made previously, while *many others provided fresh perspectives*" (51; my emphasis). Fulton said that during the 1989 Biennial Meeting in Hamilton, the public was unanimous in urging that the principles of the Great Lakes Water Quality Agreement be translated into effective and enforceable legislation (Fulton 4). According to Fulton, this was "something which we came to agree with, as a result of our own work, and as a result of the input from the public. So I would say . . . it had a considerable influence in shaping our work over the past two years and what went into our Biennial Report" (Fulton 4). Welch emphasized that one must "Keep in mind, too, that we're human and like to be seen as credible. . . . that's got to be seen as a very important matter, and that's why I think the Science Advisory Board and the Council of Great Lakes Research Managers are *tremendously* important to our operation" (Welch 19–20). Taken together, these comments suggest that in at least some cases, the commissioners pursued an issue on the basis of public testimony, sought the support of their scientific advisory boards before committing themselves, and then, having received such support, genuinely perceived subsequent comments on this issue from the public as simply confirming their scientifically based beliefs. Thus, although the commissioners have found it politically expedient to cite public support when presenting their recommendations to legislators, they have found it politically inexpedient to suggest that their recommendations *derive* from public (as opposed to scientific) testimony. As Killingsworth and Palmer have suggested, at times it may appear that the public has considerable influence on policy recommendations when, in fact, it has little (163–91); this study suggests that at other times it may appear that the public has little influence on policy recommendations when, in fact, its influence is considerable.

Influence of Emotional and Homocentric Appeals

Despite concerns about the role of emotion, public testimony was particularly effective when appropriate emotional appeals moved the commissioners from being convinced to being persuaded; that is, from intellectual acceptance of an idea to a commitment to act on the basis of that idea (cf. Perelman and Olbrechts-Tyteca 27).¹⁵ For example, Fulton said that "where an emotional appeal tends to confirm the suffering . . . and the adverse effects of what's going on, it lends weight to the proposition that you must take action" (Fulton 8); Durnil characterized Phyllis Gorski's testimony about possible linkages between environmental contaminants

and children's health as "very convincing" (Durnil 36); and Cleveland said that such testimony "struck me and made it seem very *necessary* to ban, or just sunset, some of these persistent toxics" (Cleveland 8). Cleveland went on to say that "a lot of [the public testimony] was information that I had . . . heard and read about before. But to see the people directly, in front of you, that were directly affected, there was an *emotional* impact. . . . that had a *tremendous* impact on me" (Cleveland 9). Public testimony was also important when it provided the commissioners with arguments that they could use to justify their recommendations. As Durnil pointed out, "it doesn't make sense to recommend things to governments that governments can't do, so you want to have realistic or actionable recommendations" (Durnil 31). He went on to say that the commissioners asked themselves, "What can we recommend to governments . . . that would be hard for them not to accept?" (Durnil 31).

In both of these respects, homocentric appeals (such as appeals to concerns about human health) were far more effective than ecocentric appeals (such as appeals for the protection of biodiversity as an end in itself) in providing an alternative to egocentric appeals (appeals to the vested interests of particular individuals, companies, or industries). As Carolyn Merchant points out, "A homocentric ethic underlies the social interest model of politics and the approach of environmental regulatory agencies that protect human health" (52). This seems to be the ethic the commissioners found most appropriate to their task. For example, Durnil indicated that "human health [was] a major priority" (Durnil 23); and Welch said that "we were apparently attaching even *more* importance to *human* health, and I put it that way because I'm sure human health considerations are always *important*" (Welch 13). Cleveland made the following observations:

the Human Health [Workshop] must have had three hundred people, and it was the biggest one. . . . I was very impressed by [arguments about human health], and that's why I think that our recommendations seem to stress the human health factors so much. . . . [Human health issues] seemed to be overriding. . . . It was largely human health that they talked about at that public meeting. Of course, they mentioned things like visibility and air pollution, but what it all came down to, really, was human health. I don't remember *another topic* other than the *bad* effects of pollution, one way or another, on human health. (Cleveland 16-17)

In fact, a number of speakers at the public discussion session expressed their concern about other species or about various ecosystems (islands, coastal areas, wetlands, etc.), but they generally did so without making specific, moving appeals. For example, David Stead, executive director of the Michigan Environmental Council, talked about preserving wetlands and maintaining biodiversity, but he offered no compelling reasons why we

should do this; nor did he offer any examples of the suffering and destruction environmental contaminants were causing (206–7). As the commissioners say in their *Sixth Biennial Report*, studies of human health effects provide “rationale, incentive, and direction for public policy decisions” (7). The ecocentric appeals presented during the public discussion session often suggested direction for public policy decisions without providing an explicit rationale or incentive; they would have been more compelling had they done so. In my interview with him, Chairman Durnil said that “people *will* change their values if they know *why*, if they know the reason why they’re doing it” (Durnil 39). He went on to offer the following critique of several recent television programs on the environment: “they went through this whole litany of things that people should be doing that would make the environment better. . . . But they never, ever, told them why. The *why* is what gets controversial, obviously” (Durnil 40).

Because of the prominence of human health concerns, Lanthier indicated that he had “strong reservations” about the wording of the following passage from page 18 of the *Sixth Biennial Report*, which is reproduced on the cover of the report: “Are humans and our environment in danger from persistent toxic substances now? Are future generations in danger? Based on a review of scientific studies and other recent information, we believe the answer to both questions is yes.” Lanthier said, “I would have liked it better if [it had read] ‘Are humans in danger,’ and I wonder why *environment* was there. . . . if humans are not in danger, I don’t care about the environment” (Lanthier 16–17; the context of the interview suggests that Lanthier may here be using *I* to mean people in general). He went on to say, “Let’s not dilute with *environment*. *Environment* is a dilution [of] the danger” (Lanthier 18). Hence, he proposed the following alternative wording: “Are humans in danger from persistent toxic substances now? Are future generations in danger? Yes” (Lanthier 18); to which he added, “people will understand that. It’s rendering the thing a little bit vulgar, maybe, but people understand more vulgarity than purity” (Lanthier 19). (Lanthier had earlier explained that he was using the word *vulgar* in its original sense to mean “obtainable by everyone,” Lanthier 14.)

These observations about the effectiveness of emotional and homocentric appeals are subject to at least two qualifications. First, for both ethical and practical reasons, acknowledging an appropriate role for *some* emotional appeals should not be taken as licensing *any* emotional appeal. As Quintilian argued in his *Institutio oratoria*:

Too much insistence cannot be laid upon the point that no one can be said to speak appropriately who has not considered not merely what it is expedient, but also what it is becoming to say. . . . these two considerations generally go hand in hand.

For whatever is becoming is, as a rule, useful and there is nothing that does more to conciliate the good-will of the judge than the observance or to alienate it than the disregard of these considerations. Sometimes, however, the two are at variance. Now, whenever this occurs, expedience must yield to the demands of what is becoming. . . . the end which the orator must keep in view is not persuasion, but speaking well, since there are occasions when to persuade would be a blot upon his honour. (11.1.8-11)¹⁶

Perceived sincerity was one feature that the commissioners found persuasive. Welch, for example, said that those who spoke during the public discussion session were "very committed to this cause. There's . . . almost a missionary zeal. They really believe, and I think they do society a great service" (Welch 17); Fulton explicitly thanked one speaker "for the sincerity of [his] presentation" (Fulton 233); and Lanthier noted that the volunteers "are not animated . . . by any money or interest other than [our] better life; it *does* impress me" (Lanthier 10). Contrived emotional displays would have done more to discredit than to enhance the testimony of these speakers. However, acknowledging an appropriate role for emotional appeals in environmental policy disputes might sanction genuine expression of some emotions, particularly those emotions that evoke an empathic response.¹⁷ In the absence of a social bias against such appeals, Ms. Gorski would not have felt compelled to justify her emotion, and Ms. Hunt would not have felt compelled to apologize for hers. Instead, they would have been free to feel their emotions without embarrassment and to express their emotions without commentary.

The second qualification to these observations about the effectiveness of emotional and homocentric appeals is that although homocentric appeals seem to have been more persuasive than ecocentric appeals, those who are concerned with the larger ecosystem may still find it prudent to couple or orchestrate ecocentric and homocentric appeals. Coupling homocentric and ecocentric appeals helps to bridge the gap between such appeals and, thus, makes ecocentric concerns more accessible to a larger audience.¹⁸ Also, although in some cases an audience may be moved to address ecocentric concerns for homocentric reasons (e.g., to preserve a rain forest because it might harbor a cure for cancer), in other cases, homocentric appeals alone may be unable to move an audience to act in the interest of the larger ecosystem (there may, for example, be no compelling argument to be made for the human benefit of preserving some species or ecosystems). In anticipation of such cases, those who are concerned with the larger ecosystem would do well to cultivate ecocentric concerns even in situations when homocentric appeals may adequately address the issues at hand.

Several of the speakers during the public discussion session orchestrated

homocentric and ecocentric appeals. For example, Bob Jones of the Northern Michigan Environmental Action Council appealed for protection of "the biological, botanical, scenic, recreational, historical, and economic resources of Great Lakes islands" on behalf of "all current and future inhabitants—human and otherwise—of the Great Lakes basin" (194). And Harold Stokes argued that "we need not only to be concerned with the health of people, but also the necessity of maintaining ecosystems that will sustain healthy life" (255).

Despite Lanthier's reservations, the commissioners did, in fact, orchestrate homocentric and ecocentric appeals. In the first paragraph of their *Sixth Biennial Report*, the commissioners argue that "urgent and continuing attention is needed by all sectors of society if it is to protect the environmental integrity of the ecosystem, which includes the humans who live within and depend upon it" (1). They go on to say that "Unless there is an increase in the extent to which environmental considerations are built into the process of values formation, and human behavior thus reflects those values, environmental progress will continue to be reactive in nature" (3).

Conclusions

The details of this case suggest that the IJC's deliberative process at least begins to approximate the social constructionist model of risk communication and environmental policy formation. This model is implicit in the IJC's *Sixth Biennial Report*: "we have undertaken a number of actions over the past two years to enhance two-way communication between the Commission and a variety of Great Lakes interests. . . . It is our aim not only to make information on Agreement progress and problems available to the public, but also to receive input to our deliberations" (54). Technical experts from the Chlorine Institute, the waterworks industry, and the IJC's various scientific advisory boards presented technical information to the IJC and to the public, but to some extent the public also presented technical information, both through public testimony and through documents such as *Great Lakes, Great Legacy?* (which the IJC's Water Quality Board and Great Lakes Science Advisory Board both refer to in their 1991 reports). In their *Sixth Biennial Report*, the commissioners note that over the twenty years since the Great Lakes Water Quality Agreement was signed, nongovernmental organizations working on Great Lakes issues

have grown considerably in their sophistication and ability to interact with other Great Lakes institutions, including governments and industry. Public consultation programs and reports produced over the past few years by these organizations have contributed greatly to the general awareness and understanding of Great Lakes

issues and of the need for action. . . . the quality of research and action taken, and the level of interaction between and among all sectors of the Great Lakes Community, have been enhanced by the participation of these organizations. (11)

Clearly, members of the public conveyed their values, beliefs, and emotions to the commissioners. It should also be clear, however, that technical experts from the chlorine and waterworks industries also engaged in emotional appeals. Finally, it should be clear from some of the comments I have quoted (e.g., those of Durnil, Fulton, and Cleveland) that the commissioners' values, beliefs, and emotions were also engaged. If they were not, the public's expression of values, beliefs, and emotions would have been to no avail. To be sure, there is room for the development of greater technical expertise by the public, for greater recognition of the role emotions and values play in expert testimony, and for greater acceptance of an appropriate role for emotions and values in public testimony. Nevertheless, this case presents, at least in incipient form, all the defining features of the social constructionist model.

If the social constructionist model takes root, it should have significant implications for the expansion of democratic governance and the decentralization of political power. Hence, I propose this model both as a description of emerging public practice and as a prescription for enhancing public participation in environmental and science policy disputes. Paradoxically, however, the emergence of this model reinforces rather than displaces the spirit of the Jeffersonian vision of democracy. As the commissioners note in their *Sixth Biennial Report*:

An important element in the strategy to deal with persistent toxic substances, and Agreement requirements and environmental values generally, is education. . . . Effective environmental education is central to any effort to create a sustainable environment for future generations. When we speak of environmental education, we mean a process not confined to reciting facts and transmitting information, but one that helps people develop critical thinking skills and motivates them to seek the best decisions and actions for themselves and society. (36)

The social constructionist model calls for a public that is "enlightened enough to exercise [its] control with a wholesome discretion." And the education that must inform that discretion is not only technical, but also rhetorical.

Epilogue

Even before the IJC's *Sixth Biennial Report* was published, the chlorine recommendation—one of the two recommendations that commissioners acknowledged had been influenced by public testimony—was the subject

of intense controversy. In my interview with him, Commissioner Durnil indicated that prior to the release of the *Sixth Biennial Report* the commission received "extensive submissions from the Chlorine Institute" (Durnil 11). According to Frank Bevacqua, the IJC's public information officer, of all of the recommendations the IJC has ever made, "few seem to have reverberated as strongly in both countries" as the chlorine recommendation (1). Drawn primarily by this recommendation, industry representatives comprised 300 of the approximately 1,900 participants in the IJC's Seventh Biennial Meeting on Great Lakes Water Quality—held in October 1993 in Windsor, Ontario—nearly a tenfold increase over industry representation at the Sixth Biennial Meeting (Bevacqua 1).

Discussion of the chlorine recommendation dominated the Seventh Biennial Meeting. However, despite the strong opposition from industry, the IJC confirmed its support for this recommendation in its 1994 *Seventh Biennial Report on Great Lakes Water Quality*: "The Commission formally emphasizes and confirms the recommendations of its *Fifth* and *Sixth Biennial Reports on Great Lakes Water Quality*" (46). By 1994, only one of the commissioners (Lanthier) who drafted the *Sixth Biennial Report* remained on the commission; nevertheless, the IJC continues to support its chlorine recommendation. In an October 1994 address to the Water Environment Federation, Thomas Baldini, the new chair of the U.S. Section of the IJC, said that the chlorine recommendation "has drawn the most comment and attention. . . . [it] has been pilloried by industry, championed by environmentalists, and championed *and* pilloried by scientists" (11–12). Commissioner Baldini went on to provide a context for the IJC's position on chlorine and concluded by saying that "We have yet to see any information that would cause us to reconsider that position" (Baldini 13).

At this writing, as the IJC prepares for its Eighth Biennial Meeting on Great Lakes Water Quality (to be held in September 1995 in Duluth, Minnesota), the proposal for sunsetting chlorine as an industrial feedstock continues to be one of the IJC's most controversial recommendations.

NOTES

1. In one variation of the technocratic model, scientific experts provide "unbiased" information—but not advice—to political or industrial decision makers. See, for example, Hammond and Adelman's discussion of this variation.

In either of these variations, from the perspectives of government and industry, one problem with the technocratic model is that it can eventually result in public rejection of a project or industry in which a substantial public or private investment has been made. For example, in *The Demise of Nuclear Energy? Lessons for Demo-*